

~~42. (Added) A multilayer thermoplastic signage film, comprising:
at least one polyolefin core layer having a first side and a second side;
at least one abrasion resistant first thermoplastic skin layer overlying the
first side of the core layer, the at least one first thermoplastic skin layer having an initial
60° gloss of about 80 or more; and
at least one second thermoplastic skin layer overlying the second side of
the core layer;~~

~~wherein the composition of the core layer being different than the composition of
the skin layers, and the core layer and the skin layers being characterized by the
absence of PVC.~~

~~43. (Added) The film of claim 42, wherein the at least one first
thermoplastic skin layer has a 60° gloss reduction of 20 points or less when tested in
accordance with ASTM D4060-84 using a No. CS-10 wheel and a 250 gram load after
five cycles of rotation.~~

~~44. (Added) The film of claim 42, further comprising a clear topcoat layer
which overlies the first thermoplastic skin layer, wherein the clear topcoat layer is
characterized by the absence of PVC.~~

~~45. (Added) The film of claim 42, wherein at least one layer of a pressure
sensitive adhesive overlies the second thermoplastic skin layer.~~

~~46. (Added) The film of claim 45, wherein a release liner overlies the
layer of pressure sensitive adhesive.~~

47. (Added) The film of claim 42, further comprising an opacifying layer between the core layer and the second skin layer.

48. (Added) The film of claim 47, wherein the opacifying layer comprises a white pigment, a black pigment or a mixture thereof.

49. (Added) The film of claim 42, wherein the core layer further comprises at least one second polymeric material selected from ethylene-unsaturated carboxylic acid copolymers, ethylene-methacrylic acid copolymers, ionomers derived from sodium, lithium or zinc and an ethylene/unsaturated carboxylic methacrylic acid copolymer, and combinations thereof.

50. (Added) The film of claim 42, wherein the second thermoplastic material is present at a concentration of about 2% to about 25% by weight based on the weight of the core layer.

51. (Added) The film of claim 42, wherein the core comprises a light stabilizer at a concentration of about 1,000 to about 10,000 ppm based on the weight of the core layer.

52. (Added) The film of claim 42, wherein the first skin layer is comprised of an ionomer derived from sodium, lithium or zinc and an ethylene/unsaturated carboxylic methacrylic acid copolymer.

53. (Added) The film of claim 42, wherein the core layer further comprises an adhesive material.

54. (Added) The film of claim 42, wherein at least one of the skin layers further comprises an adhesive material, antiblock agent, slip additive, or combination of two or more thereof.

55. (Added) A multilayered thermoplastic film, comprising:
a thermoplastic core layer having a first side and a second side, the core layer comprising:

(a) a polyolefin having a density in the range of about 0.89 to about 0.97 grams per cubic centimeter;

(b) a second polymeric material selected from the group consisting of ethylene-acrylic acid copolymers, ethylene-methacrylic acid copolymers, ionomers derived from sodium, lithium or zinc and an ethylene/methacrylic acid copolymer, and combinations thereof, wherein the second thermoplastic material being present at a concentration of about 2% to about 25% by weight based on the weight of the core layer; and

(c) a light stabilizer at a concentration of about 1,000 to about 10,000 ppm based on the weight of the of core layer;

an abrasion and scuff resistant clear first thermoplastic skin layer overlying the first side of the core layer, the first skin layer comprising a light stabilizer at a concentration of about 2,000 to about 20,000 ppm based on the weight of the first skin layer, the first thermoplastic skin layer having an initial 60° gloss of about 80 or more; and

a clear second thermoplastic skin layer overlying the second side of the core layer; the second skin layer comprising a light stabilizer at a concentration of about 1,000 to about 15,000 ppm based on the weight of the second skin layer;

the composition of the core layer being different than the composition of the skin layers, the core layer and the skin layers being characterized by the absence of PVC.

56. (Added) The film of claim 55, wherein the first thermoplastic skin layer has a 60° gloss reduction of 20 points or less when tested in accordance with ASTM D4060-84 using a No. CS-10 wheel and a 250 gram load after five cycles of rotation.

57. (Added) The film of claim 55, wherein a clear topcoat layer overlies the first thermoplastic skin layer, the clear topcoat layer being characterized by the absence of PVC.

58. (Added) The film of claim 55, wherein a layer of a pressure sensitive adhesive overlies the second thermoplastic skin layer.

59. (Added) The film of claim 58, wherein a release liner overlies the layer of pressure sensitive adhesive.

60. (Added) The film of claim 55, wherein the core layer and the skin layers comprise a coextrudate.

61. (Added) The film of claim 55, wherein the first skin layer is comprised of an ionomer derived from sodium, lithium or zinc and an ethylene/methacrylic acid copolymer.

62. (Added) The film of claim 55, wherein the core layer further comprises an adhesive material.

63. (Added) The film of claim 55, wherein at least one of the skin layers further comprises an adhesive material, antiblock agent, slip additive, or combination of two or more thereof.

64. (Added) The film of claim 55, further comprising an opacifying layer between the core layer and the second skin layer.

65. (Added) The film of claim 64, wherein the opacifying layer comprises a white pigment, a black pigment or a mixture thereof.


66. (Added) A sign cutting method, comprising:
providing a pressure sensitive adhesive composite, the composite comprising a multilayered thermoplastic film, a layer of a pressure sensitive adhesive and a release liner;

the multilayered thermoplastic film comprising:

- (1) a thermoplastic core layer having a first side and a second side,
- (2) an abrasion and scuff resistant clear first thermoplastic skin layer overlying the first side of the core layer, the first thermoplastic skin layer having an initial 60° gloss of about 80 or more, and
- (3) a clear second thermoplastic skin layer overlying the second side of the core layer
- (4) the pressure sensitive adhesive layer being positioned between the second thermoplastic skin layer and the release liner, the adhesive layer being preferentially adherent to the second thermoplastic skin layer;

the thermoplastic core layer comprising:

- (a) a polyolefin having a density in the range of about 0.89 to about 0.97 grams per cubic centimeter;



(b) a second polymeric material selected from the group consisting of a ethylene -acrylic acid copolymers, ethylene-methacrylic acid copolymers, ionomers derived from sodium, lithium or zinc and an ethylene/methacrylic acid copolymer, or combination of two or more thereof, the second thermoplastic polymeric material being present at a concentration of about 2% to about 25% by weight based on the weight of the core layer; and

(c) a light stabilizer at a concentration of about 1,000 to about 10,000 ppm based on the weight of the core layer; the first thermoplastic skin layer comprising a light stabilizer at a concentration of about 2,000 to about 20,000 ppm based on the weight of the first skin layer; the second thermoplastic skin layer comprising a light stabilizer at a concentration of about 1,000 to about 15,000 ppm based o the weight of the second skin layer; the composition of the core layer and the skin layers being different, and the core layer and the skin layers being characterized by the absence of PVC;

cutting an image in the multilayered thermoplastic film; and transferring the image to a substrate.

67. (Added) The method of claim 66, wherein the first thermoplastic skin layer has a 60° gloss reduction of 20 points or less when tested in accordance with ASTM D4060-84 using a No. CS-10 wheel and a 250 gram load after five cycles of rotation.

68. (Added) The method of claim 66, wherein the multilayered thermoplastic film further comprises an opacifying layer between the core layer and the second skin layer.

69. (Added) The method of claim 68, wherein the opacifying layer comprises a white pigment, a black pigment or a mixture thereof.

70. (Added) A sign cutting method, comprising:

(A) providing a pressure sensitive adhesive composite, the composite comprising a multilayered thermoplastic film, a layer of a pressure sensitive adhesive, and a release liner;

the multilayered thermoplastic film comprising:

- (1) a thermoplastic core layer having a first side and a second side,
- (2) an abrasion and scuff resistant clear first thermoplastic skin layer overlying the first side of the core layer the first thermoplastic skin layer having an initial 60° gloss of about 80 or more, and
- (3) a clear second thermoplastic skin layer overlying the second side of the core layer,
- (4) the pressure sensitive adhesive layer being positioned between the second thermoplastic skin layer, and
- (5) the release liner, the adhesive layer being preferentially adherent to the second thermoplastic skin layer;

the thermoplastic core layer comprising:

- (a) a polyolefin having a density in the range of about 0.89 to about 0.97 grams per cubic centimeter;
- (b) a second polymeric material selected from the group consisting of ethylene-acrylic acid copolymers, ethylene-methacrylic acid copolymers, ionomers derived from sodium, lithium or zinc and an ethylene/methacrylic acid copolymer, or combination of two or more thereof, the second thermoplastic polymeric material being present at a concentration of about 2% to about 25% by weight based on the weight of

the core layer; and

(c) a light stabilizer at a concentration of about 1,000 to about

10,000 ppm based on the weight of the core layer;

the first thermoplastic skin layer comprising a light stabilizer at a concentration of about 2,000 to about 20,000 ppm based on the weight of the first skin layer;

the second thermoplastic skin layer comprising a light stabilizer at a concentration of about 1,000 to about 15,000 ppm based on the weight of the second skin layer;

the composition of the core layer being different from the composition of the skin layers, and the core layer and the skin layers being characterized by the absence of PVC;

(B) cutting the multilayered thermoplastic film in the form of an image to provide needed portions of the multilayered film and unneeded portions of the multilayered film;

(C) removing the unneeded portions of the multilayered film from the composite;

(D) placing a pressure sensitive adhesive mask over the composite in contact with the needed portions with sufficient pressure to adhere the needed portions to the mask, the mask being in contact with the first thermoplastic skin layer of the needed portions;

(E) separating the mask and the needed portions from the composite, the separated needed portions having the pressure sensitive adhesive adhered to the second thermoplastic skin layer of the needed portions;

(F) placing the mask and the needed portions against the substrate to which the image is to be adhered, the pressure sensitive adhesive adhered to the second thermoplastic skin layer of the needed portions being in contact with the substrate; and

(G) removing the mask from the needed portions leaving the needed portions adhered to the substrate.

71. (Added) The method of claim 70, wherein the first thermoplastic skin layer has a 60° gloss reduction of 20 points or less when tested in accordance with ASTM D4060-84 using a No. CS-10 wheel and a 250 gram load after five cycles of rotation.

72. (Added) The method of claim 70, wherein the multilayered thermoplastic film further comprises an opacifying layer between the core layer and the second skin layer.

73. (Added) The method of claim 72, wherein the opacifying layer comprises a white pigment, a black pigment or a mixture thereof.

74. (Added) An electronic cutting film, comprising:
(a) a core layer comprising polyolefin and having opposing major surfaces;
(b) an abrasion resistant layer disposed on one major surface, the abrasion resistant layer having an initial 60° gloss of about 80 or more; and
(c) an adhesive priming layer disposed on an opposing major surface.

75. (Added) The film of claim 74, wherein the abrasion resistant layer has a 60° gloss reduction of 20 points or less when tested in accordance with ASTM D4060-84 using a No. CS-10 wheel and a 250 gram load after five cycles of rotation.